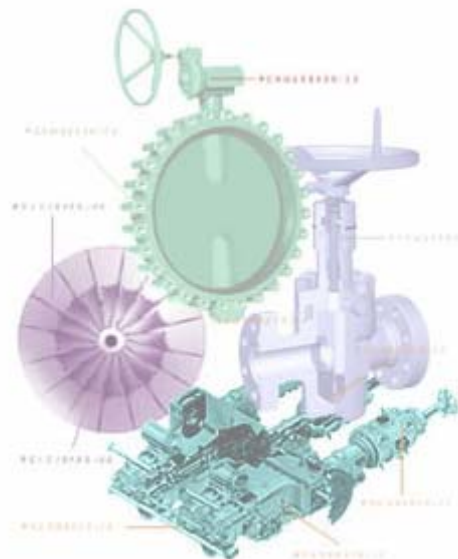




Industrial Assessment Center Case Study:

An Oilfield Equipment Maker Implements All Recommendations



The Assessment:

A team of students and faculty from the University of Louisiana at Lafayette's Industrial Assessment Center performed an Industrial Assessment in the fall of 2001. The assessment was led by Center Director, Dr. Ted Kozman and Assistant Director, Dr. Thomas Davies, both Professors in the Department of Mechanical Engineering at University of Louisiana at Lafayette.

The Plant:

Cooper Cameron is a custom manufacturer of oil field machinery and equipment. The plant featured in this case study produces valves for oil fields. In the valve manufacturing process, raw materials are forged, freeze plugged, and honed. The valve is then assembled and welded together. Testing is performed on the valves, then sent to painting and finishing. Upon completion, the valves are put on pallets and shipped. Annual utility bills totaled \$1.5 Million (1.6 % of total sales).

Significant Achievements

- *100% of recommendations implemented*
- *Recommendations covered energy and waste*
- *Saved approximately 46 % of total energy costs*

Notable Observations:

The team observed that the plant was spending a great deal of money on electricity since the production line is attached to computers. Therefore, the plant was unable to shut down without turning off the computers. The following recommendation resulted in savings

- Install a 480 to 120- volt transformer and run the new 120-volt lines throughout the production area to power only the computer portion of the machine. This will enable the 480- volt lines throughout the plant to be taken off line during off periods.
- This recommendation saved 35% of the company's utility bills.
- Management implemented this assessment recommendation within 2 months.

Assessment Summary

Energy Related Recommendations:
Total Cost Savings: \$ 717,628.00

Waste Related Recommendations:
Total Cost Savings: \$ 77,374.04

Total Recommended Savings: \$ 785,002.04
Percent of Recommendations Implemented: 100 %
Total Implemented Savings: \$ 785,002.04



Table of Assessment Recommendations

A R	Description	Recommended Savings	Implement Estimated Cost
1	Turn machines off on nights and weekends	\$537,467	\$121,200
2	Repair leaks in the compressed air system	\$126,949	\$31,740
3	Utilize photo sensor lighting in warehouse area	\$4,949	\$406
4	Utilize photo sensor light controls in storage area	\$2,399	\$203
5	Turn off chiller during peak demand period	\$45,864	\$112,325
6	Purchase an incinerator to burn waste	\$77,374	\$92,279

Giving the Chillers a Rest: The assessment team focused a great deal of attention on the plant's practice of air conditioning production areas. An opportunity was developed to reduce electrical demand charges by cycling the chillers during the peak demand time, and by adding chilled water storage capacity.

Oh those Leaks!: The team also found that the compressed air system was losing substantial air with small leaks throughout the plant. An aggressive program to find and fix the leaks was started and will save more than \$100k with an almost immediate payback.

Treating Waste OnSite: In addition to energy savings recommendations, the team observed a significant amount of wood waste at the facility and proposed the installation of an incinerator to reduce disposal costs. An interesting feature included in the incinerator was the injection of an evaporator to reduce waste water disposal fees.

W hat is involved in an Assessment?

The cornerstone of the assessment process is a day long site visit at the plant following extensive pre-visit data collection. The assessment team includes faculty and students from a nearby engineering school. The site visit includes extensive interviews with plant personnel; detailed plant tour; and the collection of various data including measurements, hardware specifications, and general observations. Following the site visit a report is prepared for the manufacturer including several explicit recommendations which are presented with estimated potential savings and implementation costs. This service is provided to the manufacturer at no direct cost.

W here can I get more information on IAC Assessments?

Results from assessments are maintained in "The Industrial Assessment Center (IAC) Database." This database contains results from over 10,000 assessments and more than 78,000 recommendations. The IAC Database can be downloaded (free!) over the internet. Along with the Database, browsers can download many other topical resources from the site. Supporting documents are also available including the Database Manual, explaining the codes used, and the ARC (Assessment Recommendation Code) Manual. The Database is a living document and is updated daily. Check it out at iac.rutgers.edu!!!

For Further Information, Contact:

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